

was published two years ago, and the two together are already standard introductions to the modern developments of the study of mind. He prefixes as a motto the words of Giard—"L'idée de science est intimement liée à celle de mécanisme et de déterminisme." But, as students are aware, the point of view is not a temperamental or sentimental aversion from the "finalists"; it merely represents the extraordinary precision which the new methods have introduced into what was once the vaguest and most fantastic of studies. Both account and criticism are excellent, as of selection of movements, the theory of trial and error, the incompleteness of adaptation.

The analysis of some special "instincts," viz., feigning death, return to rest, the search for food, mimicry, social "instincts," is a valuable part of the book. Equally valuable and especially interesting is the discussion of methods, such as the *Dressurmethode* (the training of animals), *Vexierkasten* (puzzle boxes), labyrinths, &c. One of the newest is that of Pawlow, to which is devoted the largest section. The chief work of the great Russian physiologists, Pawlow, Zélony, and Orbéli, is based on their remarkable tests of psychical saliva-reaction, as yet not so well known in England as they deserve.

A. E. CRAWLEY.

POPULAR BOTANICAL PUBLICATIONS.

(1) *Plant Life*. By Prof. J. Bretland Farmer. Pp. viii+255. (London: Williams and Norgate, n. d.) Price 1s. net.

(2) *Toadstools and Mushrooms of the Countryside*. By Edward Step. Pp. xvi+143+136 plates. (London: Hutchinson and Co., 1913.) Price 5s. net.

(3) *Wild Flower Preservation*. By May Coley. Pp. 181+29 plates. (London: T. Fisher Unwin, n. d.) Price 3s. 6d. net.

(1) **I**N this welcome addition to the well-known "Home University Library," Prof. Farmer has produced a work which, owing to its freshness of treatment of various problems of plant life, will be useful to students of botany, besides fulfilling admirably the object of the series of which it forms part—namely, the popularising of knowledge and the creation as well as the satisfaction of a desire among general readers for really authoritative and accurate, though simplified, treatises on various branches of knowledge, published at a popular price. The keynote of the book is the presentation of the main features of plant form from the viewpoint of function, and the author has touched upon various matters not usually discussed in works of this limited size,

instead of simply going over ground already covered in numerous books of this scope.

Of the twenty chapters into which the book is divided, the first five deal mainly with the lower green algæ, and it would be difficult to devise a better starting-point than that afforded by these simple types, which serve as an admirable introduction to the study of the fundamental facts of plant life. Following an account of the work of the green leaf and the root, in which emphasis is rightly laid on the manner in which the whole conformation of the plant is dominated by the leaf or other equivalent green surface, there is an admirable chapter on mechanical problems and their solution. A large section is then devoted to the adaptations shown by climbing and aquatic plants and epiphytes, as well as the relations of plants in general to water supply. Subsequent chapters deal with fungi, fungal and flowering-plant parasites, various cases of symbiosis, vegetative and sexual reproduction, and finally the nucleus and the process of fertilisation. An appendix gives a short but well-chosen bibliography.

(2) Mr. Step's handy guide to the larger fungi is a marvel of cheapness, the excellent photographic illustrations being alone well worth the price of the book. The cap-fungi lend themselves so well to "popular" treatment, owing to the absence of technical terminology in their description, that it is perhaps a matter for surprise that a work of this kind has not been published earlier, and there can be little doubt that the author's reputation for the production of readable accounts of our native plants, illustrated by skilful photographs, will ensure for the present work a wide sale. Mr. Step has purposely refrained from dealing with the classification of the plants dealt with, but the book would certainly have been rendered more useful if he had supplied a simplified key for enabling the beginner to identify the species described and depicted in the book.

(3) One is inclined to look askance at a book the main object of the author of which appears to be the advocacy of extensive collecting and drying of wild flowers, root and all, rather than the other aspect of "wild flower preservation" concerning which much has been written recently by those who deplore the raids made upon our native flora by collectors of various kinds. To be quite fair, it must be admitted that the author does deprecate greedy and destructive gathering, and that her book is written in a pleasant and enthusiastic style which to a large extent disarms criticism; while her suggestions on the keeping of records in a note-book, &c., are likely to prove

useful to young botanists. In fact, this work would be all that is desirable for the attraction of new adherents to nature study if the author were either to omit entirely the portions dealing with the preparation of herbarium specimens, or to exhort the reader to keep on the safe side of "wild flower preservation" by refraining from digging up any except the very commonest plants; after all, the roots of plants are so uniform in morphology that the collector, young or old, would lose little by letting them remain in the soil and contenting himself with taking samples from the upper portions of the plants—if it is considered necessary to make a herbarium collection at all.

F. C.

OUR BOOKSHELF.

A Medley of Weather Lore. Collected by M. E. S. Wright. Pp. 144. (Bournemouth: H. G. Commis, 1913.) Price 2s. 6d. net.

"Of the making of many books there is no end," and the natural result is that some books remind us that better books have already been written which tell us what the new ones have to tell. There is scarcely a weather proverb in the present book which is not given in Inward's "Weather Lore," a book with which the author claims no acquaintance; there are a number of beautiful quotations which make one long for summer when summer is not here; and there are, in addition, a few sayings, such as "If boys be beaten with an elder stick it hinders their growth," whose association with the weather is remote. Perhaps they are essential to a "Medley."

And yet the book has a charm; I saw it picked up and read with the greatest pleasure by a visitor to a meteorological library; I myself have renewed my acquaintance with old friends scattered through its pages, and wondered at the generations of experience which went to the production of such sayings as:—

Maayres taails an' mackerel sky,
Not long wet nor not long dry.

or,

In the middle of May comes the tail of the winter.

Some of the sayings quoted are frankly untrue, and ought, I suppose, to be omitted on that account. Such are:—

There is never a Saturday in the year
But what the sun it doth appear.

or,

No weather is ill
If the wind be still.

but perhaps this latter is intended for use by sea-sick folk.

Possibly the appearance of the book may stimulate some meteorologist to select the better-known and representative sayings from the large numbers available, and to bring the light of modern physical and meteorological knowledge to bear upon them. A short article of this character was

published two years ago by Prof. Humphreys in the *Popular Science Monthly*; it might with advantage be consulted by anyone interested in the subject.

E. G.

Weltsprache und Wissenschaft. By Prof. L. Couturat, Prof. O. Jespersen, Prof. R. Lorenz, Prof. W. Ostwald, and Prof. L. von Pfandl. Zweite Auflage. Pp. vi+154. (Jena: Gustav Fischer, 1913.) Price 2 marks.

THE displacement of Latin by the national languages in scientific publications since medieval times is one of the few phenomena at variance with the general tendency to internationalise the means of intellectual communication, such as we find it in musical and algebraic notation, the Morse alphabet, the metric system, and the flag-signalling code. The reaction against this separatist tendency in language is found in the three main attempts to devise an international auxiliary language, viz. Schleyer's "Volapük" (1879), Zamenhof's "Esperanto" (1887), and the "Ido" of the International Delegation of Academies (1908).

The present work is a powerful plea for the adoption of the last, and it must be acknowledged that a very strong case is made out in favour of this improved form of Esperanto, in which most of the beauty and flexibility of Zamenhof's masterpiece is retained, and the changes are directed towards facilitating the printing and improving the logical structure of the auxiliary language. It is interesting to note that biological and mathematical vocabularies for Ido, English, German, French, and Italian are already published, and that some twenty journals are devoted to the new international idiom.

Physics: an Elementary Text-book for University Classes. By Dr. C. G. Knott. Pp. vi+370. (London: W. and R. Chambers, Ltd., 1913.) Price 7s. 6d.

THE first edition of Dr. Knott's text-book of physics was reviewed in the issue of *NATURE* for April 15, 1897 (vol. lv., p. 557). Since its first appearance radium has been discovered, and the demand for a new edition of his work has provided Dr. Knott with the opportunity to add a new chapter on the electron theory and radioactivity, to indicate recent advances in other lines of physical research, and to amplify and revise the book as a whole.

How to Enter the Civil Service: a Practical Guide to State Employment for Men and Women. By Ernest A. Carr. New edition. (London: Alexander Moring, Ltd., 1913.) Price 2s. 6d. net.

THIS useful compendium provides the essential facts as to the conditions of entry to the Civil Service, the various appointments, the subjects of examination, and the prospects of persons entering the service of the State. Specimen examination papers and hints to students are provided also. The present edition will be found to be fully up-to-date and to provide an account of present conditions.